

SECURITIES AND EXCHANGE COMMISSION
WASHINGTON, D.C. 20549

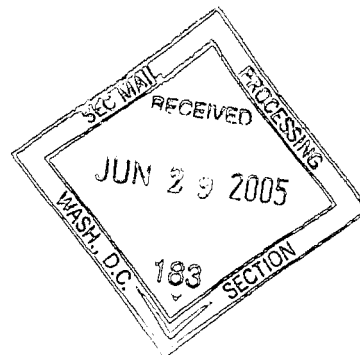


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FORM 11-K

ANNUAL REPORT

Pursuant to Section 15(d) of the
Securities Exchange Act of 1934



X Annual Report Pursuant to Section 15(d) of the
Securities Exchange Act of 1934

For the fiscal year ended December 31, 2004

or

Transition Report Pursuant to Section 15(d) of the
Securities Exchange Act of 1934

For the transition period from _____ to _____
Commission file number _____

MILACRON INC.
RETIREMENT SAVINGS PLAN
(full title of the plan)

MILACRON INC.
(Name of issuer)

2090 Florence Avenue
Cincinnati, Ohio 45206
(Address and principal executive office)

PROCESSED

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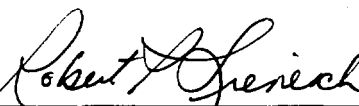
THOMSON
FINANCIAL

SIGNATURE

Pursuant to the requirements of the Securities Exchange Act of 1934, the Milacron Inc. Benefit Plans Committee has duly caused this annual report to be signed by the undersigned thereunto duly authorized.

MILACRON RETIREMENT SAVINGS PLAN

Date: June 24, 2005

By: 
Robert P. Lienesch
Senior Vice President - Finance,
Controller and Chief Financial Officer
and Member of the
Milacron Inc. Benefit Plans
Committee

Financial Statements and Report of Independent Certified Public Accountants

Milacron Retirement Savings Plan

December 31, 2004 and 2003

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REPORT OF INDEPENDENT CERTIFIED PUBLIC ACCOUNTANTS

Milacron Benefit Plans Committee

We have audited the accompanying statements of net assets available for benefits of Milacron Retirement Savings Plan (the Plan) as of December 31, 2004 and 2003, and the related statement of changes in net assets available for benefits for the year ended December 31, 2004. These financial statements are the responsibility of the Plan's management. Our responsibility is to express an opinion on these financial statements based on our audits.

We conducted our audits in accordance with the auditing standards generally accepted in the United States of America. Those standards require that we plan and perform the audit to obtain reasonable assurance about whether the financial statements are free of material misstatement. The Plan is not required to have, nor were we engaged to perform an audit of its internal control over financial reporting. Our audits included consideration of internal control over financial reporting as a basis for designing audit procedures that are appropriate in the circumstances, but not for the purpose of expressing an opinion on the effectiveness of the Plan's internal control over financial reporting. Accordingly, we express no such opinion. An audit also includes examining, on a test basis, evidence supporting the amounts and disclosures in the financial statements, assessing the accounting principles used and significant estimates made by management, as well as evaluating the overall financial statement presentation. We believe that our audits provide a reasonable basis for our opinion.

In our opinion, the financial statements referred to above present fairly, in all material respects, the net assets available for benefits of the Plan as of December 31, 2004 and 2003, and the changes in net assets available for benefits for the year ended December 31, 2004, in conformity with accounting principles generally accepted in the United States of America.

Our audits were conducted for the purpose of forming an opinion on the basic financial statements taken as a whole. The supplemental schedule of assets held for investment purposes is presented for purposes of additional analysis and is not a required part of the basic financial statements, but is supplementary information required by the Department of Labor's Rules and Regulations for Reporting and Disclosure under the Employee Retirement Income Security Act of 1974. This supplemental schedule has been subjected to the auditing procedures applied in the audit of the basic financial statements and, in our opinion, is fairly stated in all material respects in relation to the basic financial statements taken as a whole.



Cincinnati, Ohio
June 15, 2005

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Milacron Retirement Savings Plan

STATEMENTS OF NET ASSETS AVAILABLE FOR BENEFITS

December 31, 2004 and 2003

ASSETS	2004	2003
Investments (Note D)	\$ 164,619,350	\$ 172,220,446
Contributions receivable:		
Participants	72,675	294,565
Employer	614,048	577,690
	<u>686,723</u>	<u>872,255</u>
Net assets available for benefits	\$ <u>165,306,073</u>	\$ <u>173,092,701</u>

The accompanying notes are an integral part of these financial statements.

Milacron Retirement Savings Plan

STATEMENT OF CHANGES IN NET ASSETS AVAILABLE FOR BENEFITS

Year Ended December 31, 2004

Additions to net assets attributed to:

Contributions:

Participants	\$ 6,193,260
Employer	1,807,870
Employer - noncash common stock of Milacron Inc.	780,937
Rollovers	<u>46,384</u>
	8,828,451

Investment income:

Net appreciation in fair value of investments (Note D)	8,144,817
Interest and dividends	<u>2,379,719</u>
Total additions	<u>19,352,987</u>

Deductions from net assets attributed to:

Benefit payments and withdrawals	27,137,789
Administrative expenses	<u>1,826</u>
Total deductions	<u>27,139,615</u>
Net decrease	(7,786,628)

Net assets available for benefits at:

Beginning of year	<u>173,092,701</u>
End of year	\$ <u><u>165,306,073</u></u>

The accompanying notes are an integral part of this financial statement.

Milacron Retirement Savings Plan

NOTES TO FINANCIAL STATEMENTS

December 31, 2004 and 2003

NOTE A – DESCRIPTION OF PLAN

The following description of the Milacron Retirement Savings Plan (the Plan) provides only general information. Participants should refer to the Summary Plan Description for a more complete description of the Plan's provisions.

1. General

The Plan is a defined contribution plan sponsored by Milacron Inc. (the Company and Plan Sponsor) and covers all eligible employees of Milacron Inc. and other affiliated companies as designated by the Board of Directors. The Plan is subject to the provisions of the Employee Retirement Income Security Act of 1974 (ERISA).

2. Contributions

Participants may make pre-tax and post-tax compensation contributions of up to such percentages as specified by the Plan document. The pre-tax contributions may not exceed the maximum allowable deferral as defined by the Internal Revenue Code.

The Plan Sponsor makes quarterly contributions to the Plan, which vary by affiliated company participation. The quarterly contributions are defined by the supplements to the plan document. The Plan Sponsor also may make a matching contribution equal to the lesser of a specified percentage of each participant's eligible compensation or 50% of the amount of the participant's salary deferral contribution, with the exception of Pliers and Northern Supply employees. Plan Sponsor match contributions to the Plan are directed by the Plan Sponsor and its investment policy. They are generally made in Company stock and restricted as to participant-direction based on a vesting schedule (see Note A-5).

3. Rollover Contributions

Participants may contribute amounts representing distributions from other qualified defined benefit or defined contribution plans, provided the rollover contribution is received by the Plan on or before the sixtieth day immediately following the participant's receipt of the rollover amount.

4. Participant Accounts

Each participant's account is credited with the participant's contributions and allocations of (a) the Company's contributions and (b) Plan earnings. Allocations are based on participant earnings or account balances, as defined. Forfeitures are first applied against restorals and then against Company contributions made by the Plan Sponsor. The benefit to which a participant is entitled is the benefit that can be provided from the participant's account.

Milacron Retirement Savings Plan

NOTES TO FINANCIAL STATEMENTS (CONTINUED)

December 31, 2004 and 2003

NOTE A – DESCRIPTION OF PLAN (continued)

5. Vesting

Participants are vested immediately in their own contributions plus actual earnings thereon. Amounts in a participant's account attributable to Plan Sponsor basic contributions are fully vested after five years of service. Amounts in a participant's account attributable to Plan Sponsor match contributions made to the Plan prior to January 1, 2002 are fully vested after five years of service and those made January 1, 2002 and after are fully vested after three years of service. A participant also becomes fully vested upon total or permanent disability, upon attainment of age 65 or upon death before retirement. On April 30, 2004, the Company sold its grinding wheel business. These employees were fully vested in their employer contributions effective on the sale date.

6. Participant Loans

Participants may borrow from their accounts a minimum of \$1,000 up to a maximum of the lesser of \$50,000 or 50% of their account balance, excluding Voluntary and Company Matching Contributions. The loans are secured by the balance in the participant's account and bear interest at a rate commensurate with local prevailing rates as determined quarterly by the Plan administrator. Principal and interest is paid ratably through payroll deductions and is credited to each participant's account balance.

7. Payment of Benefits

Upon termination of service, a participant may receive a lump-sum amount equal to the vested value of the participant's account, defer their distribution, establish a distribution schedule, or may direct Putnam Fiduciary Trust Company (effective January 1, 2005, Mercer Trust Company), the trustee, to transfer payment directly into an IRA or another employer's qualified plan. Upon death, accounts are fully vested and the entire account value is distributed to the participant's beneficiary(ies).

8. Administrative Expenses

Through March 31, 2003, the Plan Sponsor paid all expenses of administering the Plan, except for administrative services for loan, in-service withdrawals and termination distributions, which are accordingly charged to participants' accounts. Effective April 1, 2003, the Plan Sponsor pays all expenses of administering the plan. If not paid by the Plan Sponsor, administrative expenses become a liability of the Plan.

9. Forfeitures

In the event a participant terminates employment prior to 100% vesting, the portion of employer contributions which is not vested is forfeited at that time. The forfeited amounts are used to reduce future employer contributions. At December 31, 2004 there were \$452,886 of forfeited nonvested accounts.

Milacron Retirement Savings Plan

NOTES TO FINANCIAL STATEMENTS (CONTINUED)

December 31, 2004 and 2003

NOTE A – DESCRIPTION OF PLAN (continued)

10. Plan Amendments

On March 1, 2004, the Plan was amended to disallow employee contributions to the Milacron Inc. common stock fund. Subsequently, the Plan was amended effective July 1, 2004 to allow employee contributions to the Milacron Inc. common stock fund and restricting these contributions to 25% of the employee's investment allocation.

On October 6, 2004, the Plan was amended pursuant to a "Rights Offering" to purchase Company stock in accordance with the "Rights Offering" filed by the Plan Sponsor. Participants were permitted to allocate contributions to purchase additional shares of Company stock (subject to the terms of the "Rights Offering" and ERISA).

On December 24, 2004, the Plan was amended to provide for a 4% employer basic contribution for all eligible employees of Oak International Inc., Milacron Industrial Products Inc., Milacron Inc., Milacron Marketing Company, Cimcool Industrial Products Inc. and Milacron Plastics Technologies Group Inc. and a maximum 3% employer matching contribution for eligible employees of Milacron Inc., Milacron Marketing Company, Cimcool Industrial Products Inc. and Milacron Plastics Technologies Group Inc.

NOTE B – SUMMARY OF SIGNIFICANT ACCOUNTING POLICIES

1. Basis of Accounting

The financial statements of the Plan are prepared under the accrual method of accounting.

2. Use of Estimates

The preparation of financial statements in conformity with accounting principles generally accepted in the United States of America requires management to make estimates and assumptions that affect the reported amounts of net assets available for plan benefits as of the date of the financial statements and the reported amounts of changes in net assets available for plan benefits during the reporting period. Actual results could differ from those estimates.

Milacron Retirement Savings Plan

NOTES TO FINANCIAL STATEMENTS (CONTINUED)

December 31, 2004 and 2003

NOTE B – SUMMARY OF SIGNIFICANT ACCOUNTING POLICIES (continued)

3. Investment Valuation and Income Recognition

Money market accounts are valued at cost which approximates fair value. All other investments are recorded at fair value based on quotations obtained from national securities exchanges as of the end of the year. Participant loans are recorded as the unpaid principal balances of the individual loans.

Purchases and sales of investments are recorded on the trade date. Gains and losses on the sale of investments are calculated on the specific identification method. Interest income is recorded on the accrual basis. Dividends are recorded on the ex-dividend date. The Plan presents in the statement of changes in net assets available for plan benefits the net appreciation or depreciation in the fair value of its investments, which consists of realized gains and losses and unrealized gains and losses on those investments.

4. Payment of Benefits

Benefits are recorded when paid.

5. Risks and Uncertainties

The Plan invests in various investment securities. Investment securities are exposed to various risks such as interest rate, market, and credit risks. Due to the level of risk associated with certain investment securities, it is at least reasonably possible that changes in the values of investment securities will occur in the near term and that such changes could materially affect participants' account balances and the amounts reported in the statement of net assets available for benefits.

NOTE C – RELATED PARTY TRANSACTIONS

During the year ended December 31, 2004, the Plan purchased, transferred, and sold or distributed to terminated participants shares of Milacron Inc. common stock as follows:

Number of shares purchased	1,158,944
Cost	\$3,544,490
Average cost per share	\$3.06
Number of shares sold or distributed	1,472,017
Proceeds	\$4,803,262
Average proceeds per share	\$3.26
Dividends	-

Milacron Retirement Savings Plan

NOTES TO FINANCIAL STATEMENTS (CONTINUED)

December 31, 2004 and 2003

NOTE D – INVESTMENTS

The current value of individual investments that represent 5% or more of the Plan's net assets available for benefits at December 31 are as follows:

	2004	2003
Milacron Inc. Common Stock	\$ 6,276,042	\$ 9,025,603
Putnam Money Market Fund	14,431,602	15,987,134
Putnam Voyager Fund	44,243,104	50,748,320
Putnam Bond Index Fund	10,407,755	12,320,136
Washington Mutual Investors R4 Fund	34,530,627	35,146,994
Putnam International Equity Fund	15,267,004	14,597,713

During 2004, the Plan's investments (including investments purchased, sold as well as held during the year) appreciated (depreciated) in fair value as determined by quoted market prices as follows:

Shares of registered investment companies	\$ 9,616,444
Milacron Inc. common stock	(1,490,788)
Common stock - other	<u>19,161</u>
	<u>\$ 8,144,817</u>

NOTE E – NONPARTICIPANT-DIRECTED INVESTMENTS

Information about the net assets and the significant components of the changes in net assets relating to the nonparticipant-directed investments as of December 31 is as follows:

Assets	2004	2003
Investments:		
Milacron Inc. common stock	\$ -	\$1,223,190
Putnam Money Market Fund	<u>30,480</u>	<u>27,905</u>
Milacron Inc. common stock	<u>\$30,480</u>	<u>\$1,251,095</u>

**Year ended
December 31,
2004**

Change in net assets:	
Employer contributions	\$ 781,367
Net depreciation in the fair value of Milacron Inc. common stock	(409,443)
Benefit payments	(48,914)
Transfer out of restricted assets	<u>(1,543,625)</u>
	<u>\$(1,220,615)</u>

Milacron Retirement Savings Plan

NOTES TO FINANCIAL STATEMENTS (CONTINUED)

December 31, 2004 and 2003

NOTE F – PLAN TERMINATION

Although it has not expressed any intent to do so, the Company has the right under the Plan to discontinue its contributions at any time and to terminate the Plan subject to the provisions of ERISA. In the event of Plan termination, participants will be 100 percent vested in their employer and employee contributions.

NOTE G – TAX STATUS

The Plan received a determination letter from the Internal Revenue Service dated November 19, 1996, stating that the Plan is qualified under Section 401(a) of the Internal Revenue Code (the Code) and, therefore, the related trust is exempt from taxation. The Plan was subsequently amended and restated. A new determination letter dated February 2, 2004, was received. The Plan Sponsor believes the Plan, as amended and restated, is being operated in compliance with the applicable requirements of the Code and, therefore, believes that the Plan is qualified and the related trust is tax exempt.

SUPPLEMENTAL INFORMATION

Milacron Retirement Savings Plan
Form 5500 E.I.N. 31-1062125
Plan No. 008

LINE 4i - SCHEDULE OF ASSETS HELD FOR INVESTMENT PURPOSES

December 31, 2004

(a)	(b)	(c)	(d)
Identity of issuer, borrower, lessor, or similar party	Description of investment including maturity date, rate of interest, collateral, par or maturity value	Cost	Current value
<u>Shares of registered investment companies</u>			
* Putnam Money Market Fund	14,431,602 shares	**	\$ 14,431,602
* Putnam Bond Index Fund	741,293 shares	**	10,407,755
* Putnam Money Market Fund-SDB	24,601 shares	**	24,601
* S&P 500 Fund	128,215 shares	**	3,940,036
* Putnam Voyager Fund	2,663,643 shares	**	44,243,104
* Putnam International Equity Fund	644,721 shares	**	15,267,004
Washington Mutual Investors R4 Fund	1,124,410 shares	**	34,530,627
Dodge & Cox Balanced Fund	69,115 shares	**	5,484,312
One Group Midcap Growth Fund	106,020 shares	**	2,471,318
Lord Abbett Midcap Value Fund	255,454 shares	**	5,780,921
AIM Smallcap Growth Fund	118,394 shares	**	3,251,096
PIMCO Total Return Fund	590,054 shares	**	6,295,880
Neuberger Berman Genesis Trust	183,980 shares	**	7,850,410
Templeton Foreign Fund	34,174 shares	**	420,339
Baron Partners Fund	249 shares	**	4,194
Berwyn Fund	62 shares	**	1,810
Constellation TIP Small-Cap Value Opportunities Fund	426 shares	**	7,128
Heartland Value Fund	9 shares	**	443
Icon Energy Fund	44 shares	**	1,012
NASDAQ-100 Index tracking stock	200 shares	**	7,982
RS Partners Fund	128 shares	**	4,437
Semiconductor HOLDERS Trust depositary receipts	100 shares	**	3,338
Stratton Growth Fund	36 shares	**	1,463
Stratton Small-Cap Value Fund	93 shares	**	3,756
The Contrarian Fund	279 shares	**	6,143
Third Avenue Real Estate Value Fund	39 shares	**	1,051
Third Avenue Value Fund	75 shares	**	3,895
			154,445,657
<u>Common Stock</u>			
* Milacron Inc.	1,851,340 shares	\$ 21,555,239	6,276,042
8x8 Inc.	200 shares	**	814
Advanced Micro Devices Inc.	100 shares	**	2,202
AM/TEX Oil & Gas Inc.	2,000 shares	**	680
API Electronics Group Corp.	150 shares	**	356
Cendant Corporation	50 shares	**	1,169

Milacron Retirement Savings Plan
Form 5500 E.I.N. 31-1062125
Plan No. 008

LINE 4i - SCHEDULE OF ASSETS HELD FOR INVESTMENT PURPOSES

December 31, 2004

(a)	(b)	(c)	(d)
Identity of issuer, borrower, lessor, or similar party	Description of investment including maturity date, rate of interest, collateral, par or maturity value	Cost	Current value
<u>Common Stock (continued)</u>			
Coeur d'Alene Mines Corp.	200 shares	**	786
Conexant Systems, Inc.	100 shares	**	199
Con Space Communications Ltd.	17,500 shares	**	11,103
Elan Corporation PLC	2,000 shares	**	54,500
EMC Corporation	100 shares	**	1,487
Encana Corporation	50 shares	**	2,855
Epimmune Inc.	155 shares	**	257
Fargo Electronics Inc.	250 shares	**	3,747
Fidelis Energy Inc.	1,660 shares	**	1,378
Force Protection Inc.	1,900 shares	**	528
Gasco Energy Inc.	300 shares	**	1,278
Geron Corporation	7,300 shares	**	58,181
IBIZ Technology Corp.	7,000 shares	**	28
Instapay Systems Inc.	728 shares	**	64
Intel Corporation	200 shares	**	4,678
Internap Network Services Corp.	1,000 shares	**	930
Interpharm Holdings Inc.	1,000 shares	**	2,450
Introgen Therapeutics Inc.	465 shares	**	3,934
J.P. Morgan Chase & Co.	100 shares	**	3,901
Keithley Instruments Inc.	100 shares	**	1,970
Kerr McGee Corporation	50 shares	**	2,890
Kinross Gold Corporation	185 shares	**	1,305
Kmart Holding Corp.	100 shares	**	9,895
Liberty Star Gold Corp.	1,000 shares	**	1,660
Lucent Technologies Inc.	3,725 shares	**	14,006
Markland Technologies Inc.	300 shares	**	232
Mission Resources Corp.	400 shares	**	2,336
Nanogen Inc.	200 shares	**	1,472
Nortel Networks Corp.	800 shares	**	2,792
Novell Inc.	750 shares	**	5,063
Odyssey Marine Exploration Inc.	800 shares	**	2,000
Pengrowth Energy Trust	800 shares	**	16,656
Provident Energy Trust	100 shares	**	948
Silver Star Energy Inc.	1,000 shares	**	1,220
Sirius Satellite Radio Inc.	3,500 shares	**	26,775
Stillwater Mining Co.	45 shares	**	507

Milacron Retirement Savings Plan
Form 5500 E.I.N. 31-1062125
Plan No. 008

LINE 4i - SCHEDULE OF ASSETS HELD FOR INVESTMENT PURPOSES

December 31, 2004

(a)	(b)	(c)	(d)
Identity of issuer, borrower, lessor, or similar party	Description of investment including maturity date, rate of interest, collateral, par or maturity value	Cost	Current value
<u>Common Stock (continued)</u>			
Superconductor Technologies Inc.	1,000 shares	**	1,390
Symantec Corp.	100 shares	**	2,576
Taser International Inc.	5 shares	**	158
Tiens Biotech Group USA Inc.	500 shares	**	3,500
Titanium Metals Corp.	165 shares	**	3,983
Triangle Multimedia Ltd. Inc.	35,000 shares	**	171
Urban Outfitters Inc.	100 shares	**	4,440
Wheaton River Minerals Ltd.	900 shares	**	2,930
Yahoo Inc.	400 shares	**	15,072
			<u>6,559,494</u>
Participant Loans	Interest rate 4 - 11%		<u>3,613,662</u>
Cash			<u>537</u>
			<u><u>\$ 164,619,350</u></u>

* Denotes a party-in-interest

** Cost of asset is not required to be disclosed as investment is participant-directed.

CONSENT OF INDEPENDENT REGISTERED PUBLIC ACCOUNTING FIRM

We have issued our report dated June 15, 2005, accompanying the financial statements and supplementary schedule included in the Annual Report of the Milacron Retirement Savings Plan on Form 11-K for the year ended December 31, 2004. We hereby consent to the incorporation by reference of said report in the Registration Statement of Milacron Retirement Savings Plan on Form S-8 (No. 333-115949).

A handwritten signature in black ink, appearing to read "Grant Thornton LLP", with a stylized flourish at the end.

Cincinnati, Ohio
June 27, 2005